

REMARKS

Claims 1, 3-8 and 15 are all the claims pending in the application. Claims 9-14 are canceled by way of this Amendment in accordance with the Examiner's requirement in paper no. 10.

The proposed drawing correction filed on February 20, 2003 has been disapproved by the Examiner, because the proposed correction is not in the form of a pen-and-ink sketch showing changes in red ink or with the changes otherwise highlighted.

The drawings are also objected to because Figs. 2 and 4 lack the proper cross-hatching.

Applicants submit a proposed drawing correction in response to the Examiner's objections in paper no. 10. These drawings are believed to obviate all drawing objections.

The disclosure is objected to because of informalities; specifically, the detailed description of the drawings does not provide a description of Fig. 4. Applicants amend the specification accordingly.

Claims 1-3, [4], 5-8 and 15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over La Gase et al. (3,823,255) in view of Arroyo et al. (4, 284,842).

Analysis

To review briefly, an object of the invention is to create an electrical cable which will be functional over a long period of time during a fire. To realize this, it is proposed to insulate the electrical conductor with a material which will withstand fire and heat. As polymeric dielectric materials are not suitable, Applicants utilize tapes of glass and/or mica. As these tapes are very expensive it is necessary to reduce the use of such tapes. The invention solves this problem by a

special and very effective application of the tape to the conductor. As two tapes are longitudinally applied to the conductor with an overlap of at least 50 % there is created a three layer insulation.

Figure 4 illustrates this concept, wherein two longitudinally introduced tapes 2, 3 are wrapped around the conductor 1. Since each tape has a 50% overlap, i.e., it wraps around the conductor 1.5 times, three layers of tape are provided about the conductor even though only two tapes are utilized. Still further, it is noted that these tapes 2, 3 are longitudinally disposed on the conductor rather than helically wound. Thus, the width of the tapes are selected to achieve the 50% overlap.

La Gase discloses a flame and radiation resistant cable assembly with several insulated conductors which are housed in a cable sheath (Fig. 2). The prior art rejection indicates that layers 12-14 constitute the first layer and layer 15 constitutes the second layer of the claimed invention. Layers 12 and 14 may include glass or mica.

The layers 12 and 14 can be helically or longitudinally introduced along the conductor 11. There is no suggestion that longitudinally introduced tapes should be overlapped, i.e., there is no teaching or suggestion that layer 12 should overlap itself by 50%, no that layer 14 should overlap itself by 50%.

Arroyo discloses a cable comprising at least one insulated conductor and a flame-retardant non metallic sheath system.

The cable includes a core 22 having a number of insulated conductors 23. The insulation of the conductors 23 is a flame-retardant plastic material (a polyvinyl chloride). Arroyo does not

disclose a tape as claimed but rather an insulating material which will be destroyed in the case of fire. In the case of fire the conductors will come into contact and the cable will no longer function. Furthermore, polyvinyl chloride will separate into hydrochloric acid in case of fire, which is dangerous for human beings and metallic parts.

The cable core of Arroyo comprising the several individually insulated conductors is wrapped with an inorganic cellular material 31 with overlapping edges (see seam 32). Layer 31 is wrapped by plastic tape 41, 42, which will of course, burn in case of fire. It is noted that the layer 31 is not an insulating layer for the metal conductor 23, as these are individually insulated (column 3, line 1).

The tapes 51, 52, which are not made of inorganic material, form the outermost layer of the sheath. They are wound helically around the layers 41 and 42 with an overlap of 50%. Although Arroyo mentions that the tapes 51 and 52 can be wrapped about the core to form longitudinal seams, Arroyo is silent about a longitudinal seam with an overlap of itself of 50%. The 50% measurement is only referenced with respect to the helically wound structure in which one layer overlaps another layer by 50%. As mentioned at col. 4, lines 27-30:

“The inner and outer tapes 51 and 52 are helically wrapped about the barrier 40 in opposite directions with each wrap of each tape being overlapped about fifty percent of the prior wrap.” (emphasis added)

Other portions of Arroyo, including col. 5, lines 56-59, also only discuss the 50% overlap with respect to one tape overlapping another tape. Thus, there is no mention that a longitudinal tape should overlap itself by 50%. Therefore, even if these references were combined, the

combined teachings do not suggest that longitudinally wrapped tapes should have a 50% overlap. Neither reference discloses a 50% overlap for a longitudinally wrapped tape.

Moreover, the layer of Arroyo which corresponds to the alleged first layer in La Gase is actually the fiberglass layer 31. Although this layer can also be formed with a longitudinal seam, there is no teaching or suggestion that the layer 31 should overlap itself by 50% when it is wrapped in this longitudinal manner.

Thus, even if one were to combine the references, one would not have been motivated to provide a longitudinally introduced first layer in which two tapes each overlap themselves by at least 50%, since the combination of references are silent with respect to this 50% overlap for longitudinal tapes.

In view of the foregoing, claim 1 is patentable.

The remaining rejections are directed to the dependent claims. These claims are patentable for at least the same reasons as claim 1, by virtue of their dependency therefrom.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No. 09/981,713

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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PATENT TRADEMARK OFFICE

Date: July 14, 2003

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Ellen R. Smith', written over a horizontal line.

Ellen R. Smith

Registration No. 43,042 ✓

Attorney Docket No.: Q64444